

FIG. 1.

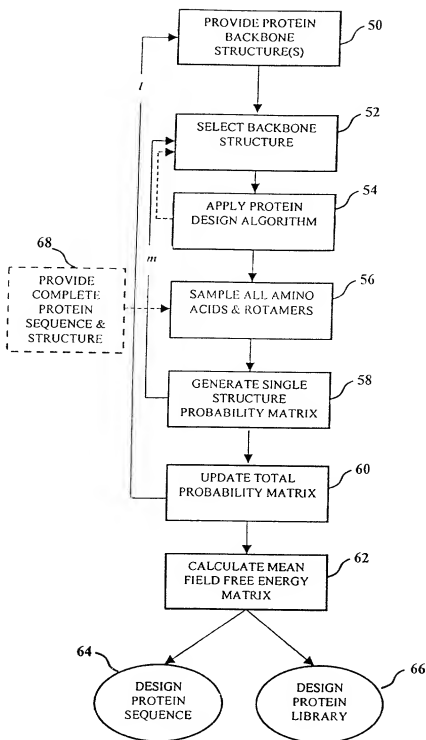


FIG. 2.

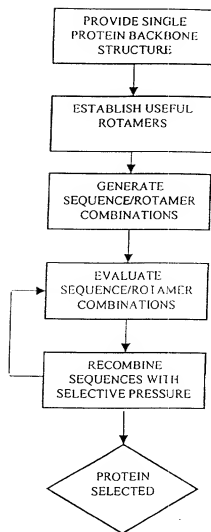


FIG. 3.

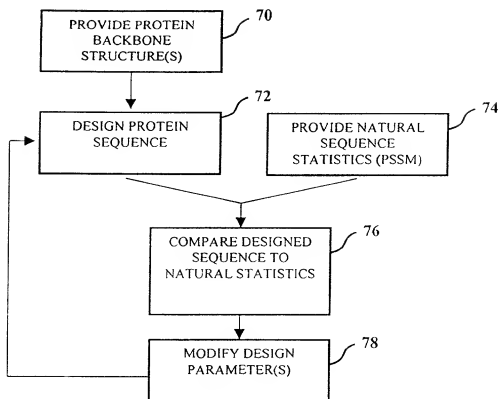


FIG. 4.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	
A	17	10	49	2	16	17	65	49	48	42	38	05	19	47	17	35	46	18	87	10	77	36	35	48	39	41	38	91	21	39	6	10	83	47
C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
D	07	17	1	4	20	50	58	37	35	92	82	24	35	03	04	47	54	20	20	19	62	58	24	54	07	29	75	46	12	44	23	17	77	02
E	15	16	65	26	20	20	37	23	23	51	47	42	32	42	1	35	35	19	18	68	13	17	2	55	32	22	33	88	23	3	44	17	67	19
F	50	95	20	50	20	38	17	71	72	8	41	50	50	20	50	39	7	2	23	31	20	58	14	20	50	5	11	17	50	20	93	16	79	50
G	39	41	77	44	0	20	12	89	13	89	11	28	09	81	28	93	68	20	18	19	19	87	82	11	31	10	61	14	14	6	9	19	10	74
H	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
I	50	86	78	15	20	11	54	4	87	49	62	50	50	19	50	41	51	16	11	11	17	49	3	10	50	23	21	73	66	67	58	14	48	50
K	48	67	71	6	17	18	62	2	28	2	05	75	61	93	46	4	55	15	10	79	52	06	3	59	35	31	13	47	3	43	26	14	58	65
L	50	03	95	20	19	92	4	47	11	43	34	50	50	96	50	55	73	11	51	79	84	34	52	75	50	54	43	78	50	84	46	17	53	50
M	50	31	11	14	19	11	7	79	59	61	69	50	50	15	50	6	68	12	49	56	61	63	74	12	50	85	55	66	67	11	64	16	71	50
N	06	20	69	4	19	50	64	28	33	71	51	36	34	13	08	37	44	20	14	14	12	28	3	48	1	36	61	55	02	39	16	15	49	1
P	11	20	04	71	20	20	22	20	67	20	53	20	49	20	20	49	20	20	18	20	20	96	18	20	20	57	17	25	17	46	03	20	87	
Q	28	11	62	42	19	20	49	18	2	36	27	54	42	4	24	22	35	15	57	53	13	26	56	4	18	2	12	34	36	16	61	35		
R	26	11	65	46	18	20	63	25	24	27	3	64	44	83	32	34	48	18	17	11	39	19	32	58	44	21	2	66	36	24	11	16	57	36
S	04	96	64	07	18	20	53	52	34	45	41	08	03	36	1	15	23	20	13	50	31	38	29	1	33	31	48	61	26	13	24	12	53	21
T	38	77	11	48	20	18	02	41	63	14	44	62	67	92	24	05	07	19	98	50	10	31	06	05	84	17	14	03	37	01	3	10	01	26
V	50	92	10	20	11	26	22	64	26	36	50	50	17	50	2	16	17	12	89	11	2	26	57	50	08	05	48	58	66	26	76	27	50	
W	50	14	20	50	20	03	20	15	11	12	99	50	50	18	50	53	15	5	61	72	18	20	16	14	50	99	14	17	50	20	16	18	15	50
Y	50	87	18	50	19	4	20	87	54	64	28	50	50	20	50	31	14	02	14	06	20	36	11	50	50	50	96	50	20	89	15	98	50	

S L P S G W T Q L T K A S D D T T Y Y N K T T D V T N T R P T D

FIG. 5.

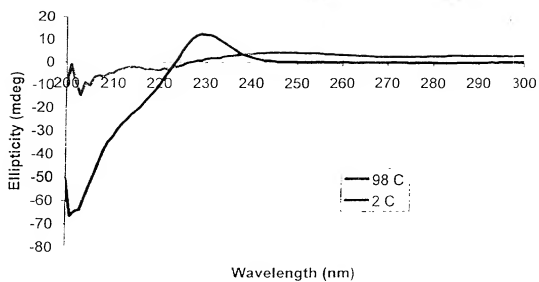


FIG. 6.

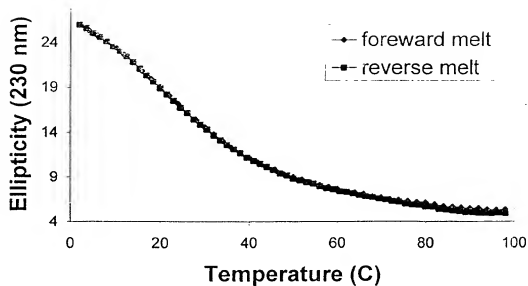


FIG. 7.

FIG. 8A.

library design using free energy limits

complexity  $\sim 10^5$

SLPSGWTQLTKASDDTTYNNKTTDVVTNTRPTD  
 N K K SG N Q SN K N N  
 D P E Q  
 V S  
 E  
 R

FIG. 8B.

complexity  $\sim 10^8$

SLPSGWTQLTKASDDTTYNNKTTDVVTNTRPTD  
 N KQK SGNSV I' Q SNKQD N N  
 D P E E QT Q  
 E V S  
 E  
 R  
 N

FIG. 8C.

library design using probability limit

complexity  $\sim 10^5$

SLPSGWTQLTKASDDTTYNNKTTDVVTNTRPTD  
 N K K SGNN V F Q SN KQ N N  
 D

FIG. 8.